

MANAGING SOLID WASTE

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Indiana Composting Facilities: 2003 Update

This volume updates volume 8, number 1 of *Managing Solid Waste*, "Indiana Composting Facilities: 2002 Update." See volume 3, number 2 of *Managing Solid Waste*, "Indiana Composting Facilities" for a detailed summary and history of Indiana composting facilities from 1994 through 1997.

Composting allows for the reclamation and reuse of materials such as discarded vegetative matter that would otherwise end up in Indiana's landfills and incinerators. The Indiana Department of Environmental Management (IDEM) administers a registration and annual reporting program for facilities composting vegetative matter. Historically, Indiana composting facilities process between 200,000 and 275,000 tons of vegetative matter annually (although in 2000, 2002 and 2003 this amount increased significantly) mostly leaves, wood, brush, and mulch. Between 35 and 45 percent of the compost produced each year is given away by local governments as part of their reuse and recycling efforts.

This paper is the 15th in the series *Managing Solid Waste* by the IDEM Office of Land Quality. For more information, contact the Facilities Data Analysis Section at (317) 233-4624. A copy of this paper can be downloaded at www.IN.gov/idem/land/pubsforms/papers.html.

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Written by: Curtis Gahimer
Data Development: Michelle Weddle

INTRODUCTION

Composting is the transformation of vegetative matter and other organic materials into a humus (or compost) better suited as fertilizer than the original materials. The transformation is accomplished through natural biochemical processes. Composting is one of the main processes used to reclaim and reuse vegetative matter. Other processes include mulching and land application.

According to most recent U.S. Environmental Protection Agency statistics (1999, updated September 2001), yard wastes make up approximately 12% by weight of the municipal solid waste stream nationally. This includes mostly vegetative matter like leaves, brush, wood, and grass. The diversion of these materials from final disposal can increase the life of Indiana landfills. In addition, the re-use of discarded vegetative matter as either compost or mulch decreases the use of chemical fertilizers and other landscaping products that can have large negative environmental impacts.

At the end of 2003, there were 114 registered composting facilities in Indiana. There has been a steady increase in registrations since 1994, the first year registration was required, when 50 facilities were registered. More than half of Indiana counties have at least one composting facility. It is important to note that several facilities were inactive at some point during the last five years. Materials received from 1999-2003 totals are listed separately from previous year totals because prior to 1998, facilities submitted totals in volume units. Beginning in 1998, facilities submitted all report data in tons. Thus, 1998-2003 figures are not comparable with those in previous years.

Indiana Composting Facilities

Table 1. Tons of Materials Received by Indiana Composting Facilities in 2002 and 2003			
County	Facility	Tons Received 2002	Tons Received 2003
Adams	City of Berne WWTP	1,034	1,060
Adams	Decatur Compost Facility	1,555	1,349
Allen	Advanced Turf	57	60
Allen	National Serv-All Compost	6,254	6,091
Allen	New Haven Utility Maintenance Center	665	540
Allen	Ringenberg Garten Haus Compost Facility	2,446	1,613
Bartholomew	Columbus- Bartholomew Yard Waste Site	7,668	9,187
Boone	Green Cycle Whites Town Site	13,232	9,980
Boone	Lamb Farms, Inc	6,902	6,156
Cass	Cass Co. SW Composting Site	5,535	4,636
Clark	Clark County Compost	12,620	13,376
Clark	Earth First of Kentuckiana Inc	12,769	18,815
Clark	Koetter & Smith	7,853	10,192
Clark	Nugent Sand Company	0	1,868
Clay	Craig Park Compost	850	150
Daviess	City of Washington Composting Facility	1,371	1,399
Dearborn	Greendale Composting	1,950	710
Decatur	Decatur Hills Inc.	1	4
Dekalb	Dekalb Co. Yard Waste Composting	5,146	3,330
Dubois	Ferdinand Street Department	54	55
Elkhart	City of Goshen Composting	2,430	3,015
Elkhart	Elkhart Co. Landfill	194	200
Elkhart	Elkhart Environmental Center	9,800	5,900
Fayette	City of Connersville Compost Facility	1,380	1,400
Floyd	Earth First of Kentuckiana Inc.	3,330	2,022
Fountain	Fountain Co. Recycling Station/Compost Site	71	49
Fountain	Harrison Steel Castings Compost Site	18	18
Franklin	Brookville WWTP Compost Facility	149	119
Fulton	County Line Landfill	0	5,201
Grant	Bank View Farms Compost	1,260	1,200
Grant	Gas City Composting	300	0
Grant	Grant Co Compost Facility	467	38
Hamilton	Creative Landscaping and Compost Co.	4,749	2,555
Hendricks	Plainfield Correctional Facility	3,039	3,737
Hendricks	Rays Composting Facility	0	758
Henry	New Castle Correctional Facility	4,821	110
Howard	City of Kokomo Yard Waste Composting	3,104	3,253
Huntington	City of Huntington Landfill Composting	502	859
Huntington	Warren Utilities	0	47
Jackson	Seymour City Composting Facility	4,460	6,430
Jasper	Town of DeMotte Compost Facility #2	1,050	150
Jefferson	City of Madison T.S.	1,300	1,222
Jefferson	Town of Hanover Composting Facility	84	329
Johnson	New Whiteland WWTP	304	261
Kosciusko	City Warsaw Compost	682	3,592
Kosciusko	Superior Excavating	380	470
Kosciusko	Town of North Webster	0	54
La Porte	Westville C.F. Compost Site	5,761	6,533
Lagrange	LaGrange Co. Yard Waste Composting	410	356
Lagrange	Shipshewana WWTP	57	58
Lake	City of Hobart Silt Settlement	0	422
Lake	East Chicago Municipal SW TS	0	14,279
Lake	Enterprise Properties	1,356	5,804

Indiana Composting Facilities

Lake	Fertile Earth Gary Compost Facility	5,365	0
Lake	Good Earth Farms	0	20,000
Lake	Lake Station Compost Facility	0	259
Lake	Stuhlmacher Soil Service, Inc.	183	152
Lake	Town of Griffith Landfill	2,492	2,777
Madison	Adams Compost Facility	32,000	30,000
Madison	Pendleton CF Compost	394	131
Marion	City of Indianapolis	7,000	57,450
Marion	Greencycle of Indiana	20,295	22,875
Marion	Southside Landfill	10,450	5,334
Marion	Tiffany Lawn and Garden Supply Inc	46,972	45,243
Marion	Town of Cumberland	356	223
Marshall	Van Vactor Farms Inc.	486	368
Monroe	Good Earth Composting	4,380	4,550
Monroe	Huntley Farm	3,078	0
Monroe	Topsoil Composting Service	2,763	4,481
Morgan	Greendell Farm	252	250
Newton	Good Earth Farms	35,000	0
Noble	Ligonier Compost	84	485
Ohio	Rising Sun Compost	263	283
Pike	Velpen C/D Landfill, Inc.	1,055	1,444
Porter	Boone Grove Hwy	0	158
Porter	Crocker Composting Site	2,165	2,455
Porter	Valparaiso Municipal Composting Site	5,093	6,252
Pulaski	Town of Francesville	155	144
Pulaski	Town of Winamac	253	247
Putnam	Putnamville Correctional Facility	1,780	69,691
Randolph	City of Winchester Compost	443	450
Randolph	Randolph Farms, Inc.	2,976	3,651
Ripley	Civil Town of Sunman	0	9
Shelby	Caldwell Landfill	1,036	3,026
Spencer	City of Rockport	0	15
St. Joseph	Household Hazardous Waste and Recycling Center	4,578	4,013
St. Joseph	Organic Resources	52,588	53,890
St. Joseph	Pioneer Southern Horticultural Products	55	90
Steuben	Steuben Co. Yard Waste Composting	2,528	1,831
Sullivan	Wabash Valley Correctional Facility	784	707
Tippecanoe	Purdue University Soilmaker West Lafayette Campus	0	11,755
Tippecanoe	Tippecanoe Co. Compost Facility	489	470
Tipton	City of Tipton Composting Facility	853	1,317
Vanderburgh	Botanical Service Ctr	192	222
Vanderburgh	Laubscher Meadows Composting Facility	8,492	9,582
Vigo	White Violet Center	98	0
Wabash	The Compost	210	210
Warrick	Warrick Co Disposal & Recycling Center	1,295	1,280
Washington	American Poultry	0	60
Washington	Washington Co. SWMD Composting	3,580	2,480
Wayne	Richmond Landfill	2,628	5,342
White	Transfarm, Inc.	17,000	10,500
Whitley	City of Columbia Compost Facility	2,900	356
TOTAL		424,458	547,518

NOTE: Facilities currently registered but not receiving compost in 2002 and 2003 are not listed in Table 1.

Indiana Composting Facilities

REGULATORY AND OPERATIONAL REQUIREMENTS

In 1992, the Indiana Legislature approved Public Law 84, now codified as IC 13-20-9. This law includes a restriction on disposal of vegetative matter. The ban applies to residential, commercial, and industrial sources. IDEM has issued guidance to interpret what materials are subject to the ban. (See Table 2. More information regarding the yard waste ban appears in the nonrule policy document “Important Notice Regarding the Yard Waste Disposal Ban,” available from IDEM’s Office of Land Quality.) This ban makes composting facilities an essential facet of solid waste management.












Composting facilities are required by state law to register with IDEM. Each registration is valid for five years, and can be renewed by submitting an updated registration form to IDEM 90 days prior to expiration.

There is no fee for registration or renewal. Composting operations that process less than 2,000 pounds of vegetative matter during a year are exempt from these registration requirements.

In addition to the registration requirements, the law requires that the facility operator submit an annual report to IDEM. The Composting Facility Annual Report indicates the amount of vegetative matter processed during the previous year, and the final use of the compost. The first reporting year was 1994.

MATERIALS PROCESSED

The increase in materials received in 2003 over 2002 receipts is due to a net increase in intake by existing facilities (56 reporting increases to only 44 reporting decreases from 2002 totals) and a net increase of facilities accepting compost

Table 2. Summary of Indiana’s Yard Waste Ban		
Materials SUBJECT to Yard Waste Disposal Ban		Leaves
		Brush
		Woody vegetative matter greater than 3 feet in length
Materials EXEMPT from Yard Waste Disposal Ban		Grass
		Woody vegetative matter bagged, bundled, or otherwise contained and less than 3 feet in length
		Very small amounts of vegetative matter bagged, bundled, or otherwise contained and less than 3 feet in length AND combined with other solid waste
		Christmas trees
		House plants
		Vegetable food scraps
		Vegetative by-products not derived from landscaping maintenance or land clearing projects such as from flower shops and funeral homes
		IDEM-approved composted vegetative matter used as cover material for solid waste landfill

(fourteen facilities accepted compost in 2003 but not in 2002; only five facilities accepted compost in 2002 but not in 2003). Tons reported accepted is an approximation for two reasons:

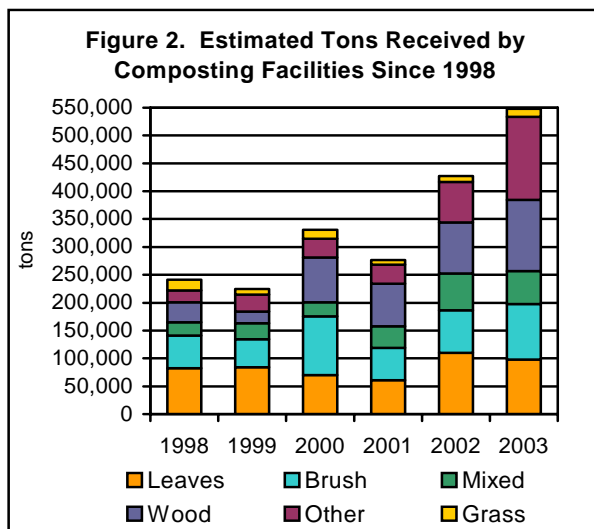
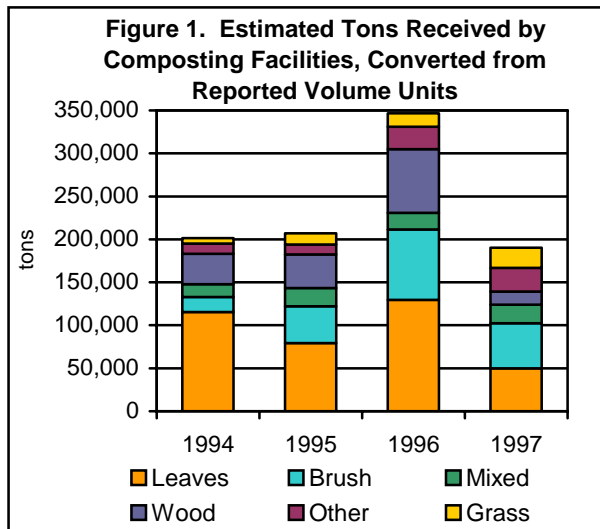
1. Beginning in 1998, composting facilities are required to report their intake in tons. Many facilities do not have weigh scales, and must convert volume measurements to weight based on conversion factors such as those in Table 3. Volume-to-weight conversion factors vary widely depending on the composition, moisture content, and compaction rate of the vegetative matter.
2. Some loads of materials are received in a manner that prohibits documentation by type and/or weight, especially small loads from residential customers. In 2003, 40 of the 98 active facilities or 41% received such undocumented loads.

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Table 3. Examples of Conversion Factors for Compostable Materials (Cubic Yards Per Ton)

Material Description	Loose	Compacted
brush	6.67	2.20
brush, shredded	5.37	--
cardboard	6.67	--
food waste	1.30	--
grass	5.00	2.50
leaves	10.00	5.00
leaves, shredded	6.70	5.71
mixed yard waste, fall	8.10	3.60
mixed yard waste, summer	5.70	2.60
paper	4.00	--
whole wood	7.14	5.88
wood, chipped	4.00	3.60

As shown in Figures 1 and 2, leaves accounted for a significant portion of total receipts from 1994 through 1999 and again in 2002. In 2000 and 2001, brush and wood accounted for the majority of receipts by weight. In 2003 wood and 'other' compostable materials comprised half of the total receipts.

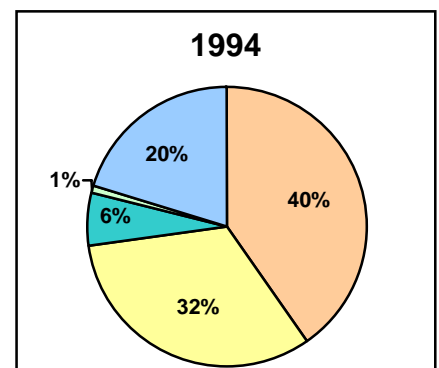
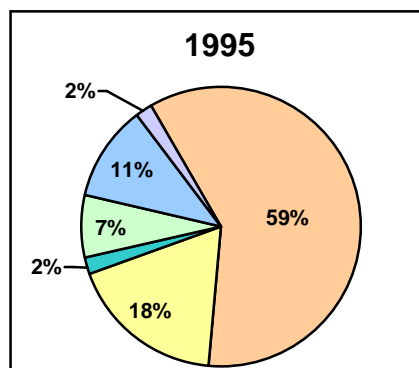
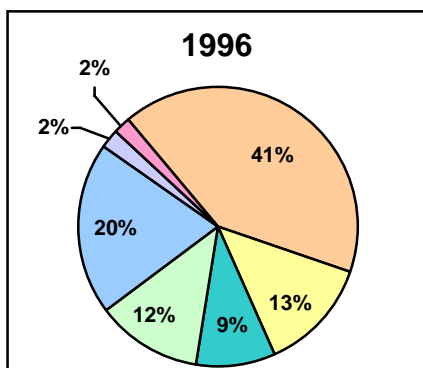
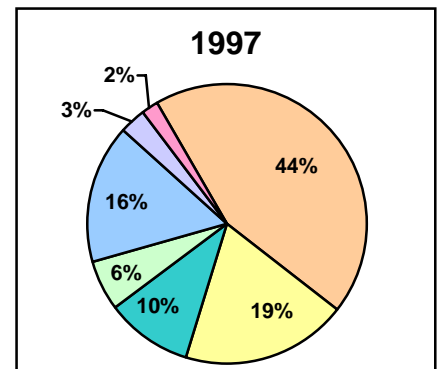
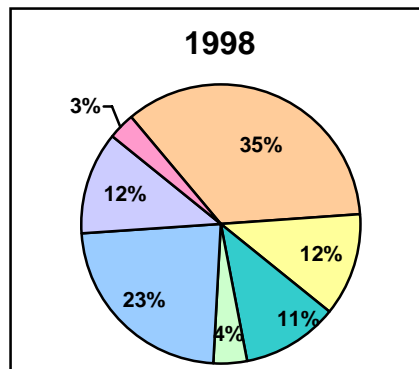
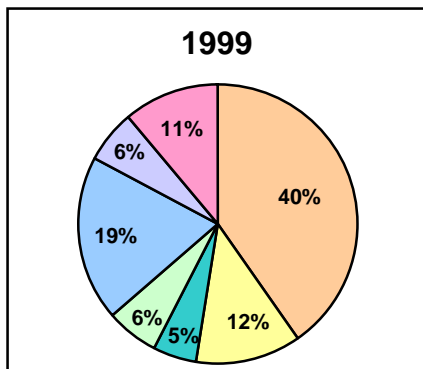
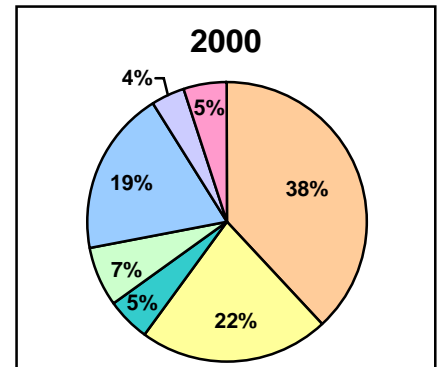
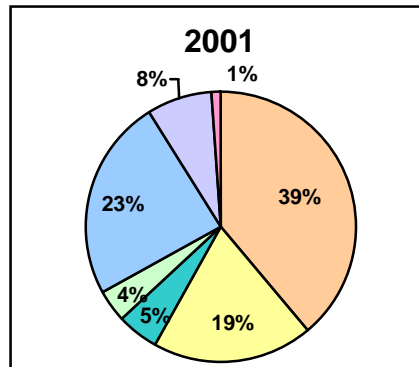
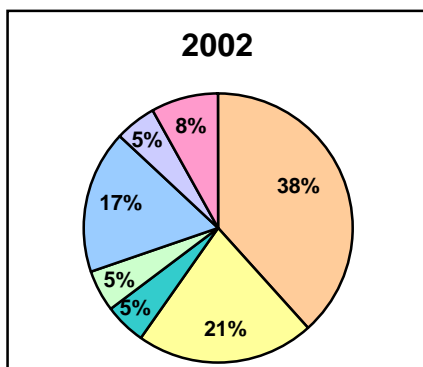
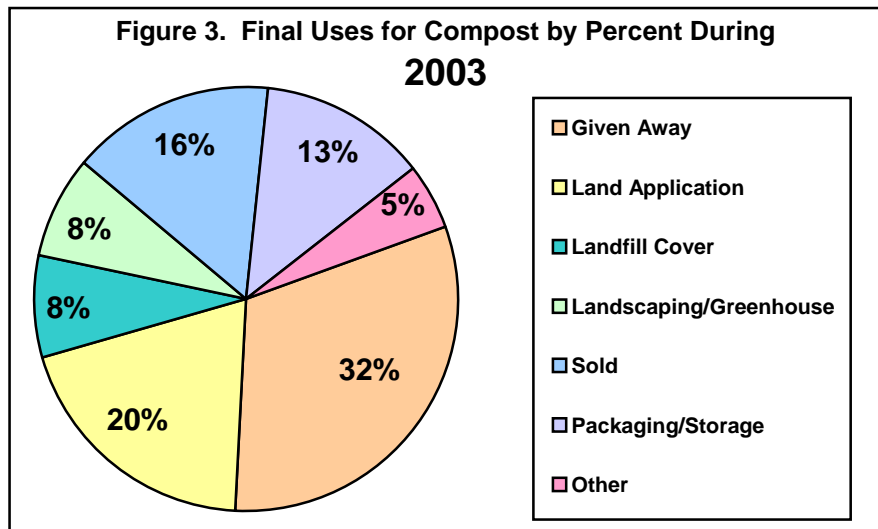


FINAL USES OF COMPOST AND OTHER PRODUCTS

Composting facilities may produce finished compost in as short as three months or as long as two years, depending on the type of raw materials, ambient temperature, and processing methods. At the end of 2003, 35% of the materials managed by Indiana registered composting facilities were still in the process of being converted to compost. Over the last nine years, materials received and still in process of being converted to compost at year-end ranged from 32 to 50%.

Figure 3 shows the final uses of materials that were successfully converted into either compost or mulch during the last nine years. In 2003, facilities gave away about 32% of total converted product, a decrease of about 6% from the amount given away in 2002. Facilities giving away product are primarily those run by cities, counties, or solid waste management districts, which comprise just over half of the 98 facilities in Table 1. Only 10 privately-owned facilities gave away about 7% of their product.

Indiana Composting Facilities



REFERENCES AND FURTHER READING

Indiana Environmental Statute IC 13-20-9,
Restrictions on Disposal of Vegetative Matter

Indiana Department of Environmental Management
Nonrule Policy Document, *Important Notice Regarding the Yard Waste Disposal Ban*, January 2000

Indiana Department of Environmental Management
and the Indiana Recycling Coalition, *Indiana Yard Waste Solutions*; January 1993

U.S. Environmental Protection Agency, Office of
Solid Waste and Emergency Response, *Municipal Solid Waste in the United States: 2001 Facts and Figures* (www.epa.gov/epaoswer/non-hw/muncpl/msw99.htm)